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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,454	10/12/2004	Xiao-Qi Zhou	H0003298.67498 US - 4018	2358
63993 7590 04/25/2008 BUCHALTER NEMER 18400 VON KARMAN AVE. SUITE 800 IRVINE, CA 92612			EXAMINER PENG, KUO LIANG	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 04/25/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,454

Applicant(s)

ZHOU ET AL.

Examiner

Kuo-Liang Peng

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/14/08 RCE.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The Applicants' amendment filed March 14, 2008 is acknowledged. Claims 1 and 35 are amended. Now, Claims 1-64 are pending.
2. The text of those sections of Title 35, U.S. code not included in this action can be found in prior Office Action(s).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 12-20, 25-44, 46-55 and 59-64 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matayabas (US 6 469 379).

Matayabas discloses a thermal interface composition comprising a vinyl-containing polydiorganosiloxane, two Si-H containing polydiorganosiloxanes.

Additives such as catalyst, inhibitors, etc. can be used. Fillers such as copper, boron nitride, etc. can be used. (col. 3, line 19 to col. 4, line 38 and col. 5, line 66 to col. 6, line 39) The particle sizes of the fillers are described in col. 6, lines 13-22, which can be considered as micro-fillers. Since the vinyl-containing polydiorganosiloxane and the Si-H containing polydiorganosiloxane have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. The composition can be used for preparing integrated circuit package, etc. (col. 6, line 51 to col. 8, lines 21) Matayabas does not explicitly mention the **morphology** (i.e., phase separation) of the composition. However, when the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because first, Matayabas does teach at least one inorganic micro-filler and at least one thermally conductive filler material. Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in

the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald*, *supra*, is applicable here. Notably, Applicants' alleged "one blended material" referring to Matayabas' disclosure does not appear to add any weight for Applicants' assertion because merely reciting a **blended** material is insufficient in determining the morphology thereof. (Emphasis added)

5. Claims 1-14, 16, 18-20, 22-23, 25-48, 50, 52-57 and 59-64 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mine (US 6 040 362).

Mine discloses a thermal interface composition comprising components A) to C). Component C) can be a platinum catalyst. (col. 2, line 5 to col. 5, line 9) Since components A) (containing Si-alkenyl groups) and B) (containing Si-H groups) have different substituents, Examiner has a reasonable basis to believe that

each has a different solubility parameter. An inhibitor can be use. (col. 6, lines 23-41) Fillers such as silica, copper, etc. can be used. (col. 6, line 42 to col. 7, line 33) The composition can be used for preparing IC, etc. (col. 8, lines 21-41) Mine does not explicitly mention the **morphology** (i.e., phase separation) of the composition. However, when the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald*, *supra*, is applicable here.

6. Claims 1-15, 17-26, 35-49 and 51-60 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Theodore (US 4 292 225).

Theodore discloses a composition comprising a vinyl or allyl group-containing polydiorganosiloxane, a Si-H containing polydiorganosiloxane and fillers such as fumed silica, zinc oxide, boron nitride, etc. These fillers are

thermally conductive. A platinum catalyst can be used. An inhibitor such as silicone oligomer containing alkenyl groups, quinoline, etc. can be used. (col. 2, line 62 to col. 5, line 15 and Examples) Since the vinyl or allyl group-containing polydiorganosiloxane and the SiH-containing polydiorganosiloxane have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. A viscosity modifier (rheological modifier) can be used, which can be non-reactive (i.e., solvent). (col. 2, lines 36-58) The preambles “thermal interface composition” and “coating composition” are merely intended use, and do not carry any weight of patentability. Theodore does not explicitly mention the **morphology** (i.e., phase separation) of the composition. However, when the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

For Applicants’ argument regarding “Siloxane-Based Materials comprising Different Solubility Parameters”, Examiner’s position relied on *In re Fitzgerald*, *supra*, is applicable here.

7. Claims 1-5, 8-10, 12-15, 17-18, 25-39, 43-44, 46-49, 51-52 and 59-64 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hanson (US 5 950 066).

Hanson discloses a thermal interface composition comprising a blend of polyorganosiloxane graft polymer of octadecene, a methylsiloxane host and fillers such as alumina, boron nitride, metal powders, etc. and mixtures thereof. (col. 3, line 58 to col. 4, line 48) The particle sizes of the fillers are described in col. 4, lines 9-22. Since the polyorganosiloxane graft polymer of octadecene and methylsiloxane host have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. Hanson does not explicitly mention the **morphology** (i.e., phase separation) of the composition. However, when the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because, first, Hanson does teach at least one inorganic micro-filler and at least one thermally conductive filler material.

Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald, supra*, is applicable here.

8. Claims 21, 24, 55 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matayabas.

Matayabas discloses a thermal interface composition, *supra*, which is incorporated herein by reference. Matayabas is silent on the use of a rheological modifier such as a solvent. However, a solvent can affect the properties of the composition such as processibility, shear modulus, etc. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was

made to incorporate a solvent in the composition in order to afford a thermal interface composition with desired properties.

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because first, Matayabas does teach at least one inorganic micro-filler and at least one thermally conductive filler material. Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald, supra*, is applicable here. Notably, Applicants' alleged "one blended material" referring to Matayabas' disclosure does not appear to add any weight for Applicants' assertion because merely reciting a **blended** material is insufficient in determining the morphology thereof. (Emphasis added)

9. Claims 22 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matayabas in view of Mine.

Matayabas discloses a thermal interface composition, *supra*, which is incorporated herein by reference. Matayabas is silent on the specific catalyst set forth in the instant claims. However, Mine teaches the use of a platinum catalyst for curing a polysiloxane-based thermal interface composition. (col. 4, line 59 to col. 5, line 9) The motivation is to facilitate the curing the composition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize Mine's platinum catalyst for curing Matayabas' composition.

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because first, Matayabas does teach at least one inorganic micro-filler and at least one thermally conductive filler material. Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald*, *supra*, is applicable here. Notably, Applicants' alleged "one blended material" referring to Matayabas' disclosure does not appear to add any weight for Applicants' assertion because merely reciting a **blended** material is insufficient in determining the morphology thereof. (Emphasis added)

10. Claims 21 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson.

Hanson discloses a thermal interface composition, *supra*, which is incorporated herein by reference. Hanson is silent on the use of a rheological modifier. However, Hanson teaches the viscosity is important. (col. 4, lines 9-22) Furthermore, a rheological modifier can affect the viscosity of the composition. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate a rheological modifier in the composition in order to afford a thermal interface composition with desired viscosity.

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because first, Hanson does teach at least one inorganic micro-filler and at least one thermally conductive filler material. Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald, supra*, is applicable here

11. Claims 16 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson in view of Matayahas'731 (US 2003/0168731).

Hanson discloses a thermal interface composition comprising metal powders, *supra*, which is incorporated herein by reference. Hanson is silent on the specific use of copper. However, Matayahas'731 teaches the use of copper in a

thermal interface composition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Matayahas'731's copper in Hanson's composition.

For Applicants' argument regarding "Inorganic Fillers v. Thermally Conductive Fillers", Examiner disagrees because first, Hanson does teach at least one inorganic micro-filler and at least one thermally conductive filler material. Second, the specific advantages of the alleged fillers are merely speculation/opinion. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) Applicants are further reminded that [a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

For Applicants' argument regarding "Siloxane-Based Materials comprising Different Solubility Parameters", Examiner's position relied on *In re Fitzgerald*, *supra*, is applicable here

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is

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(571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck, can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp
April 24, 2008

/Kuo-Liang Peng/
Primary Examiner, Art Unit 1796